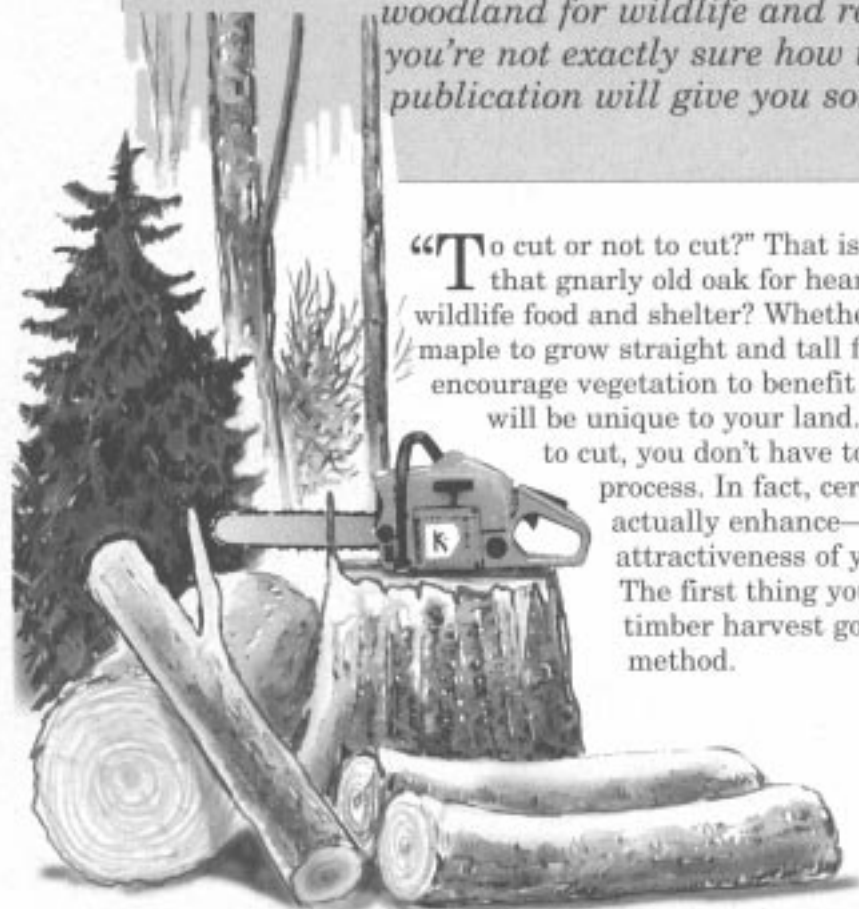




To Cut or Not to Cut?

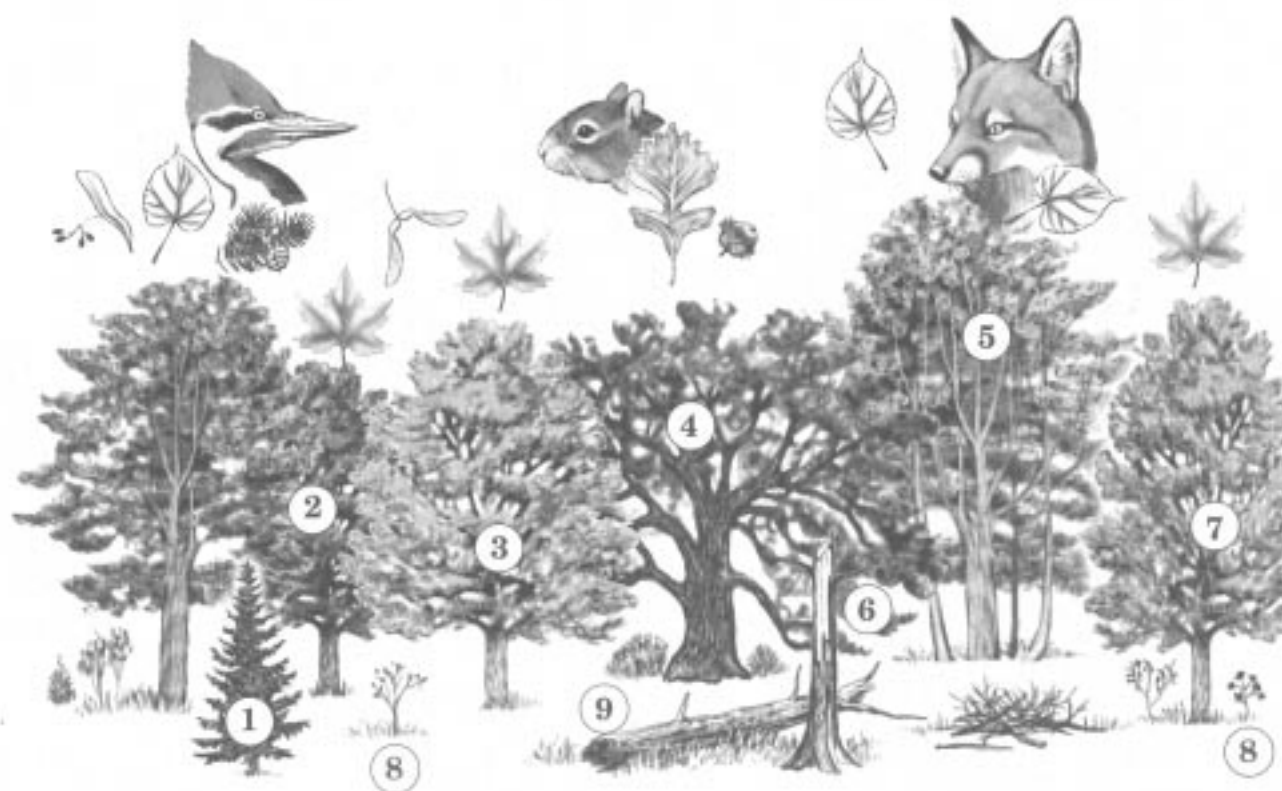
Managing Your Woodland for Wildlife

If you're like most Wisconsin woodland owners, you own between 20-100 acres, and you enjoy a variety of activities on your land: watching wildlife, hiking, hunting, picking berries, picnicking or taking photos of wildlife and wildflowers. You delight in the beauty and solitude that comes with owning a woodland. You warm yourself in late fall and winter by cutting a little firewood, and you wouldn't mind making a little extra cash, though managing your woodland for commercial purposes isn't your highest priority. Mostly, you want to enhance your woodland for wildlife and recreational purposes, but you're not exactly sure how to go about it. This publication will give you some ideas about how to begin.



To cut or not to cut? That is the question. Whether it is wiser to cut that gnarly old oak for hearthwarming firewood, or leave it for wildlife food and shelter? Whether it is better to leave that stand of maple to grow straight and tall for sawtimber, or be thinned to encourage vegetation to benefit wildlife? Truly, the choice is yours and will be unique to your land. The good news is that if you do decide to cut, you don't have to sacrifice wildlife habitat in the process. In fact, certain timber harvest practices can actually enhance—at a faster rate than nature alone—the attractiveness of your property to certain types of wildlife. The first thing you need to do is identify your wildlife and timber harvest goals and choose the appropriate harvest method.

To Cut or Not To Cut



Keeping Wildlife in Mind

Which trees you cut can have a major impact on wildlife. With wildlife habitat as our goal, here's one way to cut a small patch of woodland. Be sure to clearly mark trees you want preserved if you are planning a timber sale. Do this in cooperation with a commercial timber operator. A professional forester or wildlife manager can help you identify the best wildlife trees.

Tree 1: Preserve evergreen for cover value.

Tree 2: Cut these tall, straight hardwoods for timber and to allow trees 1 and 8 room to grow for wildlife. Make brush piles with the slash.

Tree 3: Same as tree 2.

Tree 4: Preserve. Best acorn producer on the property.

Tree 5: Preserve this den tree for fox family that lives there.

Tree 6: Preserve dying tree for insects for woodpeckers.

Tree 7: Same as tree 2 and 3.

Tree 8: Preserve oak sapling for future wildlife food.

Tree 9: Preserve dead wood on the forest floor for salamanders, insects, snakes and chipmunks.

Timber Management Basics

How you cut your woodlot depends on the kinds of trees you have, their ages, sizes, the spacing between them, and their values to you for wildlife, aesthetics, recreation and lumber. You can choose from three basic methods to cut your woodlot: clearcutting, shelterwood cutting and selection cutting. Another option is to not cut at all. These methods are briefly described below, but before you begin a project, consult with a DNR forester and wildlife manager about your plans.



1. Clearcutting For Sunlovers Only



A clearcut removes all trees in a given area in one cut. It is used to regenerate trees that require full sun such as aspen, tamarack, black spruce, birch, black cherry, red pine, jack pine and sometimes oak. These sun-loving trees are often the first to sprout after a clearcut. That's why they're called *pioneers*. Once pioneer trees grow into small trees, they literally shade out new seedlings, making way for trees which prefer shade in order to sprout—maple, ash, basswood and beech. Eventually, these shade-loving trees will dominate the woodland unless you, or nature, take action. Windstorms, tornadoes, insect infestations, flooding and fires can simulate the effects of clearcutting, but since you can't control these events, you may want to take saw in hand and give nature a little help.

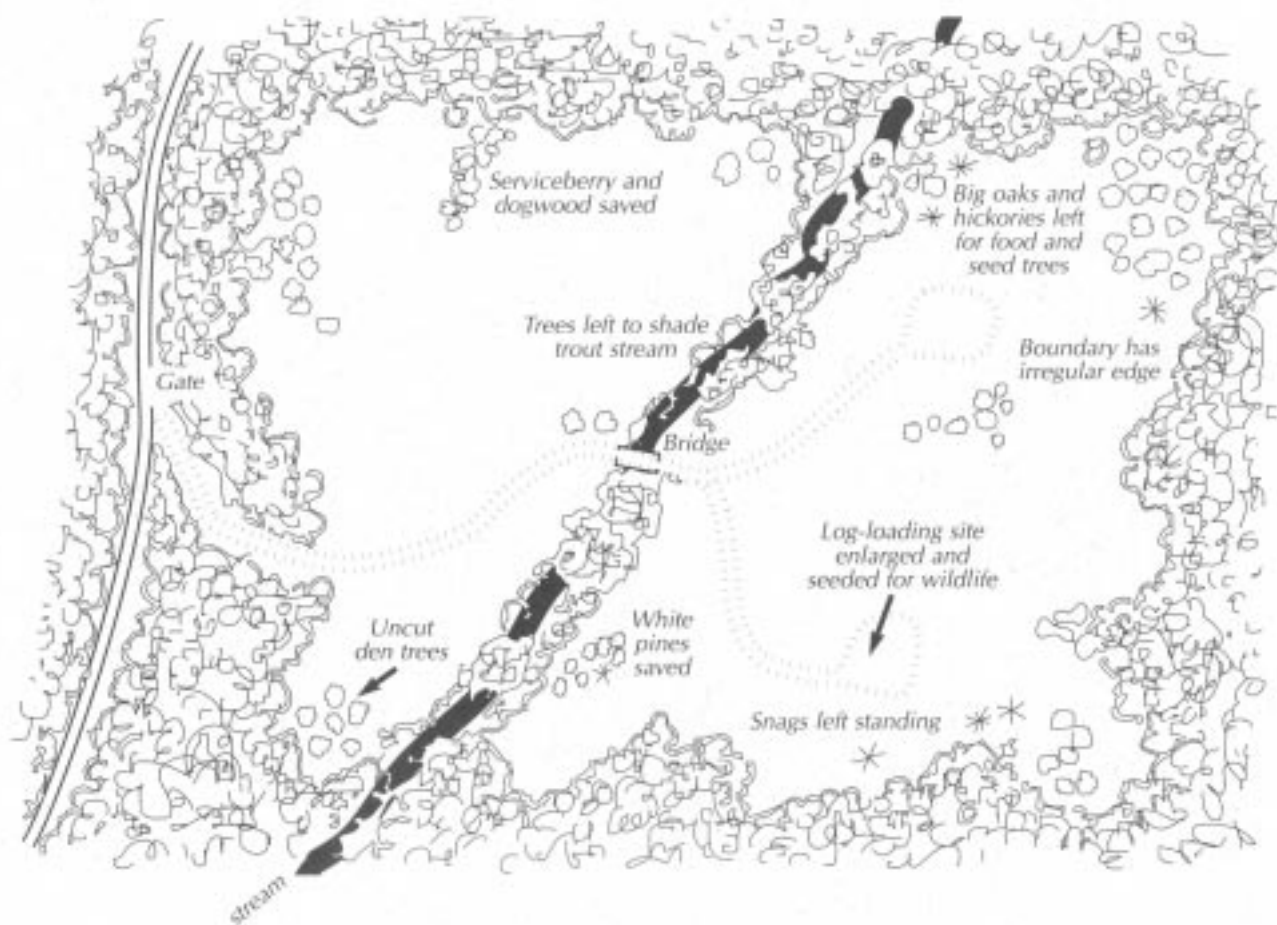
Clearcuts and Wildlife

Fresh clearcuts make some people shudder. They think they are unsightly and harmful to the environment. Yet, within months of a carefully planned clearcut, the site is lush with new growth that many wildlife love, and at no loss to environmental quality.

White-tailed deer are attracted to the nutritious twig litter left over from an aspen clearcut. Later, the deer return to feed on the sun-loving plants that invade the newly harvested area. The thickets which quickly sprout provide excellent hiding places, not

only for does and their fawns, but for ruffed grouse. Grouse raise their broods in young aspen stands where they find both food and shelter from preying goshawks and owls. Bear, rabbit, woodcock, butterflies, and a wide variety of songbirds such as indigo buntings, towhees, song sparrows, yellow warblers, yellowthroats and chestnut-sided warblers also find food and shelter in these young stands. One of Wisconsin's rarest warblers, Kirtland's warbler, requires young stands of jack pine. Jack pine require regeneration through clearcutting or burning.





Clearcuts with Wildlife Considerations

Illustration adapted by permission from Pennsylvania Game Commission.

- ✓ Make your clearcuts into irregular shapes if you want to favor edge-loving wildlife such as rabbits, deer and ruffed grouse. Irregular edges are also more natural in design.
- ✓ Leave an uncut area around roadways to create a visual buffer.
- ✓ Leave an uncut area around waterways to protect water quality.
- ✓ Seed log landings and roads for wildlife after the sale is completed.
- ✓ Leave dead trees and wildlife shrubs standing in clearcuts for songbirds and woodpeckers.
- ✓ If possible, break up area to be clearcut into units 2-20 acres in size. Cut one or more of these parcels every 5 years.

Aspen: Featured Clearcut Tree

Aspen is Wisconsin's most well-known tree managed by clearcutting. It's easy to manage, is valued for its pulpwood, and it provides excellent wildlife benefits.

Aspen provides habitat for more wildlife than any other forest type. White-tailed deer, black bear, cottontails, snowshoe hare and beaver thrive on the tasty bark, buds or catkins, leaves and nutritious young sprouts. The soft wood of mature aspen decays easily and forms cavities for northern flying squirrels, black-capped chickadees, nuthatches and woodpeckers. Chipmunks, voles and shrews also call aspen forests home.

Ruffed grouse love aspen forests. Young stands provide great cover for their broods and mature stands provide shelter as well as nutritious catkins for winter food. The oldest stands attract courting grouse which "drum" for mates atop fallen aspen logs.

Woodcock prefer aspen forests during breeding season, and frequently stop there during migration. Song sparrows, white-throated sparrows, mourning warblers and chestnut-sided warblers are attracted to young stands while ovenbirds, red-eyed vireos, thrushes, and flycatchers seek out large, older stands. The thick, moist leaf litter and decaying logs provide the perfect hiding place for eastern garter and red-bellied snakes, blue-spotted and eastern tiger salamanders, gray tree frogs and American toads. In spring, chorus frogs and spring peepers sing from temporary ponds that form in depressions in aspen stands.

Managing for Aspen

After Wisconsin's virgin forests were cut, aspen naturally sprouted under the bright sun all across the cutover landscape. Though still common today, this valuable wildlife tree is declining in abundance. One reason is that many landowners are reluctant to clearcut because they prefer older trees. But if done right, clearcutting aspen can provide a variety of ages. And, you'll be amazed at how quickly

the forest grows back.

New aspen suckers sprout from roots and can grow 6 to 10 feet in their first summer—more than one inch a day! If left unmanaged, aspen live about 50 years, decline in vigor, and then are replaced by sugar maple, yellow birch and white ash which have established themselves in the shade of the older aspen. As aspen converts to its shade-loving successors, its associated wildlife community changes along with it.

If you own an older forest of balsam fir or northern hardwoods with two or three healthy aspen trees per acre, you can convert your site back to aspen by clearcutting. Since wildlife managers have found that wildlife abundance varies with the age of the aspen, it's best to manage for aspen in patches. Maintain one quarter of the trees at 1-10 years old; one quarter at 11-20 years; one quarter at 21-30 years and one quarter above 30 years. Cut these blocks in 2- to 20-acre parcels.

Different wildlife like different size openings; ruffed grouse and woodcock like the smaller clearings while deer prefer larger cuts. If you clearcut in 20-acre blocks, leave scattered clumps of mature aspen for their swollen buds (catkins) which provide critical winter food for ruffed grouse.

As always, before you cut, look around you. If your neighbors have recently clearcut their properties, delay your clearcut until their trees just top the decade mark.

Forests are always changing. By letting nature take its course, rather than clearcutting, you are not stopping your forest from changing, but allowing it to change in a different way. If you delay your aspen clearcut too long, the trees will die of old age and eliminate their natural capability to sprout from the roots. Making wise management decisions today can keep your forest productive for wildlife tomorrow.



2. Shelterwood Cutting

For Partial Sun-lovers



A shelterwood cut involves harvesting trees in at least two cuts. This method is used to regenerate trees that favor partial-sun conditions such as oak, hickory, white spruce and white cedar. The first cut allows more light to reach the forest floor and prompts tree seedlings to sprout and grow beneath the shade of the shelterwood trees. You will need to mark the trees you want preserved as shelterwood trees before the first cut—these are usually the more mature and bountiful nut producers. Once the new seedlings have become well established, the shelterwood trees are removed. After both cuts, sunlight prompts a flourish of food-producing grasses, shrubs, brambles and vines—a potential boon for wildlife.



Oak: Featured Shelterwood Tree

Oaks produce acorns and wildlife seek out acorns more than any other food. They provide energy-rich and nutritious food for deer, bears, gray and fox squirrels, chipmunks, raccoons and mice. Many birds, from blue jays, nuthatches, red-bellied and red-headed woodpeckers to wild turkeys, grouse, wood ducks, and quail include acorns in their diet.

In addition to acorns, oaks have light, open canopies which encourage brush and grass growth that provides excellent forage and cover. In addition, the trunks and large limbs often rot out before the tree actually dies, providing excellent den sites for cavity dwelling birds and mammals. Raccoons, foxes, and pileated woodpeckers are some of the larger inhabitants of oak cavities.

Oak twigs provide browse which is highly sought after by deer, cottontails, mice and

voles. The leaves and deep furrowed bark hide insects which provide food to a variety of songbirds such as great-crowned flycatchers, scarlet tanagers, red-eyed vireos, and Blackburnian warblers. The ground litter under an oak's sprawling branches supports many insects, toads, blue-spotted salamanders, hog-nose and fox snakes, rufous-sided towhees, whip-poor-wills, and brown thrashers.

Managing for Oak

Concern has arisen about the future of Wisconsin's slow-growing oak woodlands. Prized for their timber and firewood values, oaks are being harvested at an alarming rate. In southwestern and central parts of the state, harvest has exceeded growth by more than 30 percent. In addition, some oak forests are being replaced by shade tolerant trees such as maple, basswood and ash.

That's because we have stopped the wild fires that historically held back succession yet didn't harm the fire-tolerant oaks.

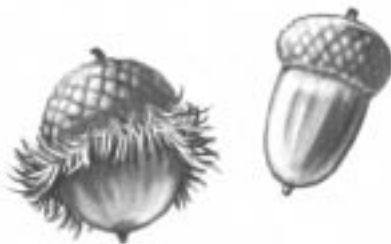
Fortunately, foresters have developed management techniques that have proven successful at regenerating oaks. While the following practices are similar for all oak types, consult with your local forester or wildlife manager before implementing any management strategy.

Planting Oaks and Acorns

If you have patience and the money, consider planting oak seedlings or acorns.

Purchase seedlings in bulk quantities from DNR nurseries or buy them from commercial nurseries. Gather acorns for planting as they ripen and fall. To weed out the duds, place fresh acorns in water and discard the floaters. Then, plant a **lot**. Germination is low with this method because hungry squirrels and other critters dig up the nuts. If you're planting a small plot, a simple chicken wire fence can protect the seeds. Be sure to plant white oak acorns the same fall you collect them. Red oak acorns can either be planted that fall or the following spring if kept in cold storage. Ask your DNR forester for specifics.

Always plant seedlings and acorns in areas where weeds have been controlled. To prevent new grasses and weeds from out-competing your seedlings, manually weed small plots and apply herbicides on larger plots. To prevent damage from browsing deer, rabbits and mice, protect oak seedlings with plastic cylinders or other tree-protecting devices.



Shelterwood Cutting

Shelterwood cutting is the most common method of oak regeneration, though clearcutting is sometimes used. Both require careful management. Shelterwood and clearcutting lets in sunlight that encourages oak seedlings. But increased sunlight also encourages other, often faster growing, plants to flourish. If left unchecked, these plants will out-compete the oak for water and nutrients and will eventually shade out and kill the oak seedlings. To prevent this, you may need to apply herbicides, conduct a controlled burn or lightly graze the woodlot. Get assistance from a DNR wildlife manager or forester before attempting weed control.

To conduct a shelterwood cut, first harvest 30-60% of the trees in your woodlot, but leave the largest, healthiest and most prolific acorn producers. These trees provide the seed source needed for the next generation of oaks in your stand. After about 3 to 8 years, when oak saplings are established and regeneration is considered adequate, harvest most of the remaining trees. Again, keep a few mature acorn producers; it will be years before the young trees can produce acorns of their own.

Since oaks typically produce a good acorn crop only once every 3-5 years, promote a variety of oak types if you have them. This will help ensure a reliable acorn crop even if one variety fails to produce in a given year.

To promote oaks in mixed hardwood forests, remove select maple, basswood, ash, and elm trees. Manage for weeds and brush as mentioned above.

Oaks are one of Wisconsin's most valuable resources. Your efforts to maintain oak on your property will reward you with a lifetime of wildlife habitat and the beauty of owning and protecting an oak woodland.

3. *Selection Cutting Made for the Shade*

Selection cutting is used to regenerate shade-tolerant trees such as white ash, sugar maple, basswood and balsam fir. Selection cutting involves the removal of individual or small groups of trees from a diverse range of tree sizes and ages. The result is a variety of food and cover options for wildlife, from brush to tall trees, and from evergreen to leafy trees. Woodpeckers, deer, salamanders, ovenbirds, gray foxes and goshawks thrive in this diverse habitat. The small openings you create through selection harvesting promote new saplings and also provide grasses for wildlife.



Selection Cutting with Wildlife Considerations

- ✓ Save a variety of mature nut-producers such as oak, hickory, beech, walnut, and butternut trees. Since the average oak tree produces an acorn crop just once every 3-5 years, a variety of nut producers will ensure a consistent supply of food during off years.
- ✓ To produce adequate food for wildlife throughout any given year, you will need at least 25 nut trees, 14 inches or more in diameter per acre.
- ✓ Avoid cutting old trees with sprawling branches. They often produce abundant nut crops and can make good den trees.
- ✓ Protect seed- and berry-producing shrubs in the understory, especially those that hold their berries during winter such as dogwood, elderberry, alder, mulberry, blueberry, blackberry and wild grape. When nut production is low, these fruits become primary food sources.
- ✓ Leave plenty of space between trees to encourage wildlife shrubs. If you need a rule of thumb, take the diameter (in inches) of a given tree and double it. Then simply drop the inches and call them feet instead. For example, for a tree 15 inches in diameter you'd leave about 30 feet between it and its nearest competitor.

Hemlock: Featured Selection Cut Tree

Wisconsin has a variety of evergreen trees. Eastern hemlock is one of the most majestic. This tree sprouts in moist soils beneath the shade of more sun-loving trees. It can remain, stunted, for 25 to 200 years under shady conditions until windthrow or fire opens the canopy and lets sun in. It then grows very quickly.

Though hemlock's market value is low, its wildlife value is high. Wildlife use hemlock as single trees, small clumps, in pure stands or as a component in mixed hardwood stands. Hemlock provides food and shelter for white-tailed deer, yellow-bellied sapsuckers and solitary vireos. Black-throated blue warbler, black-throated green warbler and Blackburnian warbler nest in thick hemlock groves as do the veery and junco. The seeds from hemlock cones provide food for red crossbills, pine siskins, chickadees and red squirrels. Sharp-shinned hawks, ravens, deer and more take refuge from winter winds and deep snow within dense hemlock stands.

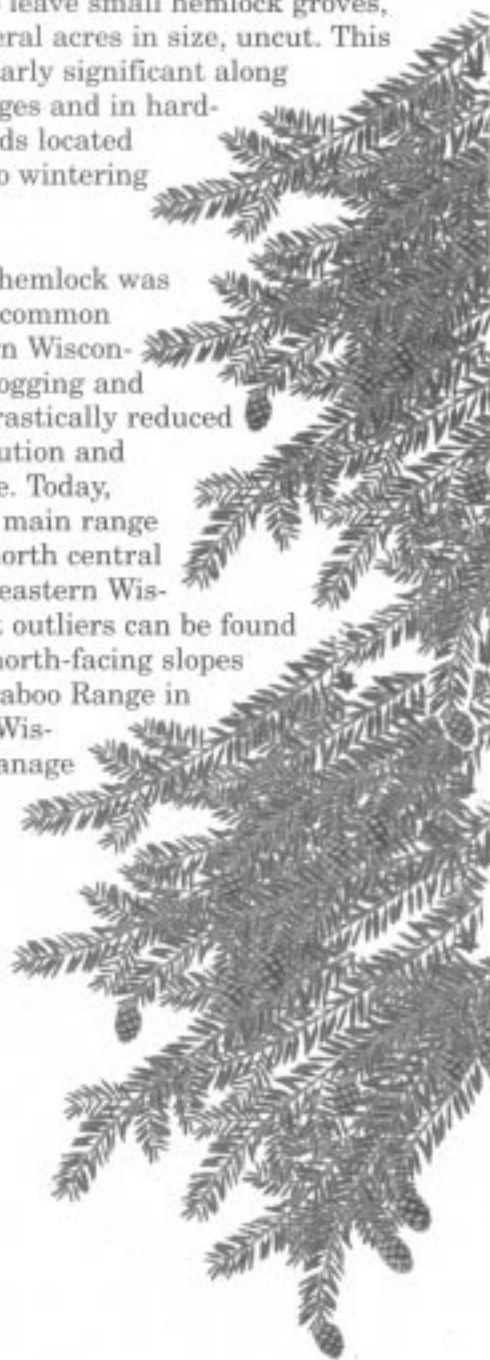
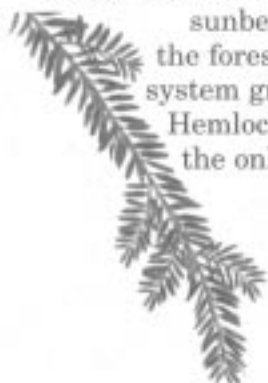
Mature hemlock spreads its dark green branches so densely that only a passing sunbeam or two ever penetrates to the forest floor. Its shallow root system grows best in rich, moist soils.

Hemlock is long-lived and often is the only evergreen present in northern hardwood stands. It is also often found associated with white cedar along swamp edges.

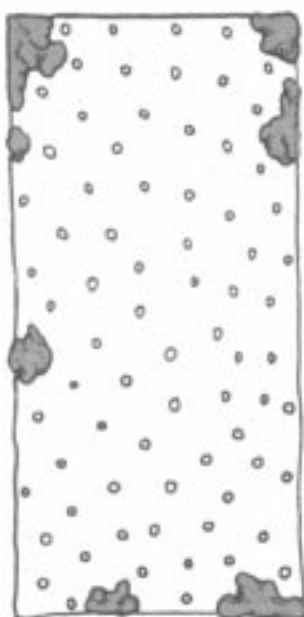
Managing for Hemlock

Because hemlock regenerates in shade, selection cutting is the best cutting method. However, if you have pure stands of hemlock, it's best to leave small hemlock groves, about several acres in size, uncut. This is particularly significant along swamp edges and in hardwood stands located adjacent to wintering areas.

Although hemlock was once very common in northern Wisconsin, past logging and fire has drastically reduced its distribution and abundance. Today, hemlock's main range includes north central and northeastern Wisconsin but outliers can be found on rocky north-facing slopes of the Baraboo Range in southern Wisconsin. Manage it with care.



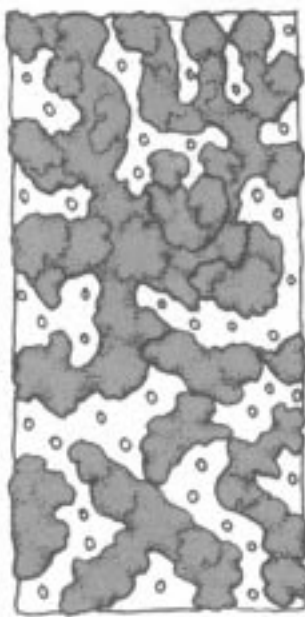
Summary of Timber Management Practices



Clearcut

Sun-Loving Trees

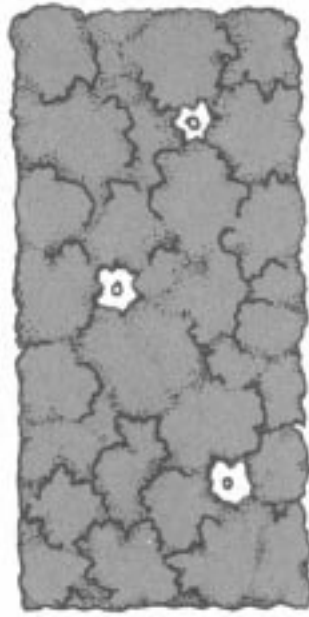
Aspen
Birch
Tamarack
Jack Pine
Red Pine
Black Spruce



Shelterwood

Partial Sun-Loving Trees

Oak
White Cedar
White Spruce
Hickory



Selection

Shade-Loving Trees

Ash
Basswood
Maples
Balsam Fir

Remember, different trees require different amounts of sunlight to flourish. In turn, these trees attract different kinds of wildlife to your property. How you manage your woodlot will, in part, determine the types of wildlife you will likely see. Illustration adapted by permission from the Minnesota Department of Natural Resources.

General Timber Management Guidelines

No matter what timber harvest methods you decide to use, keep in mind three basic principles: protect dead wood; protect perch and nest trees and clean your house, not your woods. Once you have decided which trees you want to save for wildlife, mark the trees clearly with the help of a professional forester. If you are working with commercial timber harvesters, be sure to give them your wildlife goals in writing. This will help ensure that the wildlife trees and shrubs you want protected will not be cut by accident.



1. Protect Dead Wood

- ✓ Check dead and dying trees for active wildlife dens and nests before cutting; avoid cutting inhabited trees.
- ✓ Preserve at least one to six dead trees per acre.
- ✓ Save at least one tree of any size per acre with broken tops, woodpecker holes, fungal growth or bark wounds. This indicates a future den or cavity tree.



2. Protect Perch and Nest Trees

- ✓ Save large pines for eagle and osprey nest trees if you live near a lake or large river.
- ✓ Save large oaks, maples and other long-lived trees, especially those located near waterways or on south- and east-facing slopes in southern Wisconsin. They may be used as roosts and perches by wild turkeys, songbirds and hawks.



3. Clean Your House, Not Your Woods

- ✓ Build brush piles from tree tops and woody debris which remain after harvest.
- ✓ Leave dead wood on the ground for chipmunks, snakes, salamanders, insects and other small creatures.
- ✓ Leave small trees and shrubs for wildlife food and cover.
- ✓ Seed log landings and roads with perennial grasses and legumes and maintain in an open condition if you are managing for edge-loving wildlife.



Letting Nature Take its Course No Timber Harvest

A final option is to let nature take its course. Not harvesting trees is a clear option and one that many landowners prefer because of the benefits for woodpeckers, salamanders, warblers and other wildlife which depend on old forests. In addition, old growth stands are rare in Wisconsin. If you have one, or own property next to one, be sure you contact a DNR forester or wildlife manager to help you develop a management plan.



The Final Say

When managing your woodland for wildlife, you will always have the last say when deciding whether to cut or leave a particular tree. You should always give careful attention to the variety and condition of trees as well as the spacing between them. Obviously, not everything can be explained in this publication, so don't hesitate to give your local DNR wildlife manager or DNR forester a call if you have additional questions and concerns. They'll have specific recommendations for you.



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